

# LED driver

## BA618

The BA618 is an IC developed for driving 7-segment LED displays, and contains seven positive logic circuits. Input and output are directed in the same direction by DIP Pin 16, with the layout optimized to facilitate mounting.

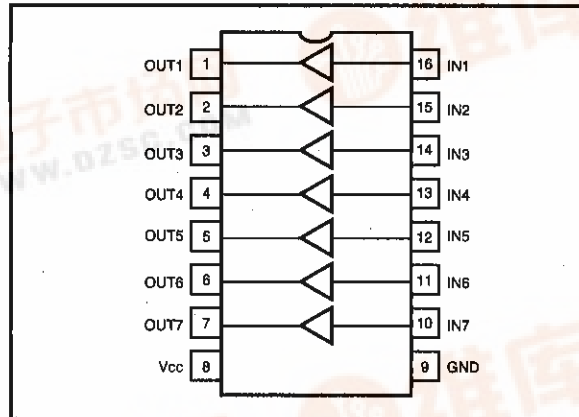
### ●Applications

LED drivers  
Relay drivers

### ●Features

- 1) Contains seven circuits.
- 2) Current of up to 100mA can be driven.
- 3) Input and output are directed in the same direction, for easy mounting.
- 4) Can be directly coupled with TTL.

### ●Block diagram



● Absolute maximum ratings (Ta=25°C)

| Parameter               | Symbol           | Limits  | Unit |
|-------------------------|------------------|---------|------|
| Power supply voltage    | V <sub>CC</sub>  | 16      | V    |
| Power dissipation       | P <sub>d</sub>   | 500*    | mW   |
| Operating temperature   | T <sub>opr</sub> | -30~75  | °C   |
| Storage temperature     | T <sub>stg</sub> | -55~125 | °C   |
| Maximum drive current   | I <sub>OUT</sub> | 100     | mA   |
| Allowable input voltage | V <sub>IN</sub>  | -0.5~16 | V    |

\* Reduced by 5mW for each increase in Ta of 1°C over 25°C.

● Internal circuit configuration diagram

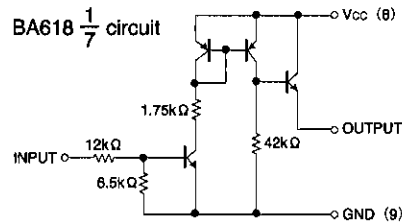


Fig.1

● Electrical characteristics (unless otherwise noted, Ta=25°C, V<sub>CC</sub>=10V, R<sub>L</sub>=100Ω, C<sub>L</sub>=20pF)

| Parameter                      | Symbol                 | Min. | Typ. | Max. | Unit | Conditions                                    | Measurement Circuit |
|--------------------------------|------------------------|------|------|------|------|---|---------------------|
| Output (Low) circuit current   | I <sub>CC (OFF)</sub>  | —    | —    | 500  | μA   | V <sub>IN</sub> =0V                           | Fig.4               |
| Output (High) input current    | I <sub>IN (ON)</sub>   | —    | 0.4  | 0.8  | mA   | V <sub>IN</sub> =5V, V <sub>OUT</sub> ≥8.5V   | Fig.4               |
| Output (High) input voltage    | V <sub>IN (ON)</sub>   | —    | 1.9  | 2.5  | V    | V <sub>OUT</sub> ≥8.5V (R <sub>L</sub> =200Ω) | Fig.4               |
| Output (Low) voltage           | V <sub>IN (OFF)</sub>  | 0.8  | 1.5  | —    | V    | V <sub>OUT</sub> ≤3mV                         | Fig.4               |
| Output (High) voltage          | V <sub>OUT (IN)</sub>  | 8.5  | 8.9  | —    | V    | V <sub>IN</sub> =2.5V                         | Fig.4               |
| Output (Low) leakage current   | I <sub>OL (OFF)</sub>  | —    | —    | 30   | μA   | V <sub>IN</sub> =0.8V                         | Fig.4               |
| Output (High) input voltage II | V <sub>INII (ON)</sub> | —    | 1.9  | 3    | V    | V <sub>OUT</sub> ≥8.5V                        | Fig.4               |

● Electrical characteristic curves

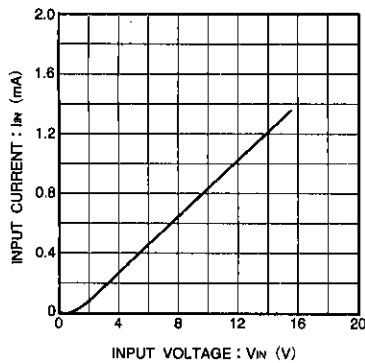


Fig. 2 Input characteristic

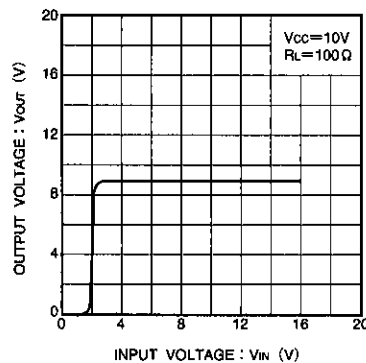


Fig. 3 Input/output characteristic

● Measurement circuits

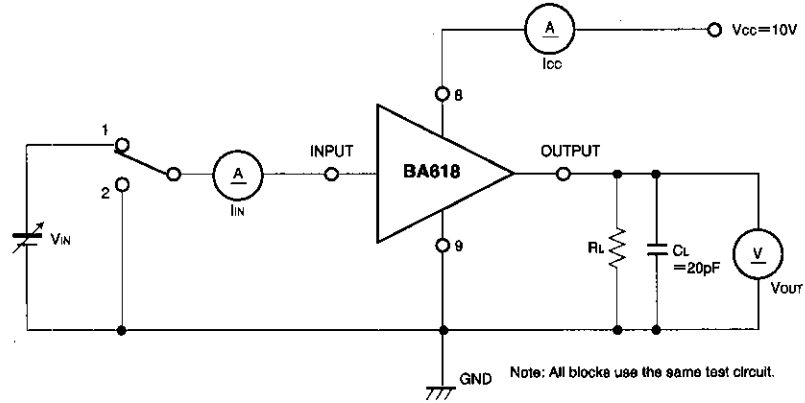


Fig.4

● Application example

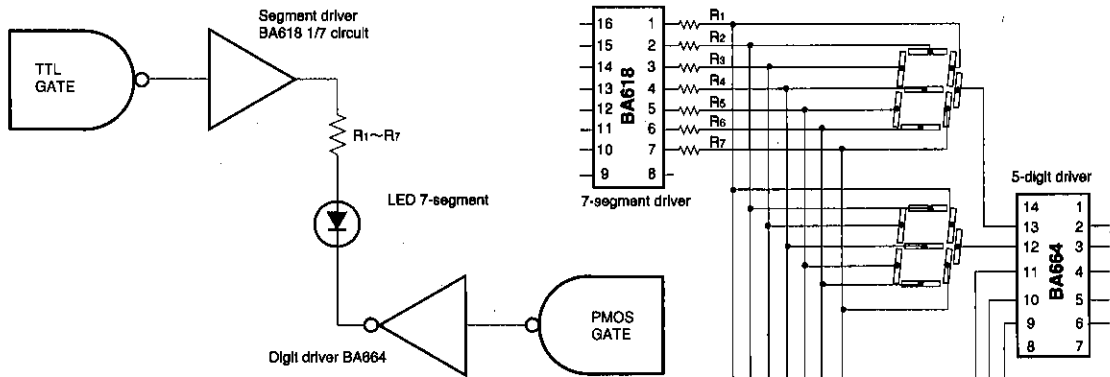
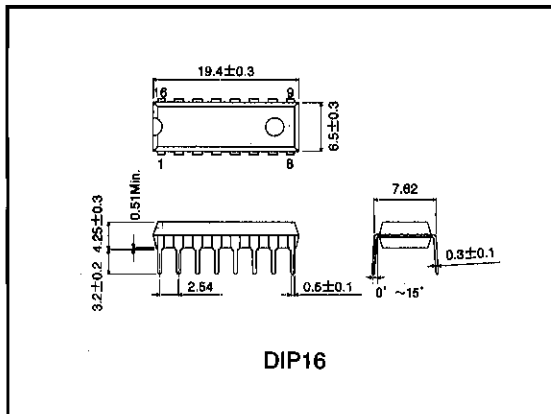


Fig. 5 7-segment, 5-digit LED driver circuit

● External dimensions (Units: mm)



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